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**WHAT IS CLAIMED IS:**

- 1           1.     An insert for a bat comprising:  
2                     a substantially tubular body extending along a longitudinal axis, the body  
3     having internal and external surfaces; and  
4                     at least one sheet having a proximal edge, a distal edge, and first and  
5     second side edges, the at least one sheet coupled to at least a portion of one of the  
6     internal and external surfaces of the body such that the first and second edges each  
7     extend from the proximal edge to the distal edge along a path that is substantially non-  
8     parallel with the longitudinal axis.
- 1           2.     The insert of claim 1 wherein the first edge overlaps the second edge  
2     along at least a portion of the path to form an overlapped seam.
- 1           3.     The insert of claim 1 wherein the first edge is positioned adjacent to the  
2     second edge along at least a portion of the path to form a non-overlapped seam.
- 1           4.     The insert of claim 1 wherein the at least one sheet includes first and  
2     second sheets with the second edge of the first sheet overlapping the first edge of the  
3     second sheet and the second edge of the second sheet overlapping the first edge of the  
4     first sheet.
- 1           5.     The insert of claim 1 wherein the at least one sheet includes first and  
2     second sheets with the second edge of the first sheet is positioned adjacent to the first  
3     edge of the second sheet and the second edge of the second sheet is positioned adjacent  
4     to the first edge of the first sheet.
- 1           6.     The insert of claim 4 wherein the body has a periphery and wherein the  
2     first and second sheets at least partially overlap to substantially cover the periphery.

1           7.     The insert of claim 1, wherein the path taken by at least one of the first  
2     and second side edges between the proximal edge and the distal edge is selected from  
3     the group consisting of helical, sinusoidal, convoluted, jagged, curved, irregular and  
4     combinations thereof.

1           8.     The insert of claim 1 wherein the sheet comprises a material selected  
2     from the group consisting of a fiber matrix composite, a metal matrix composite, a  
3     carbon matrix composite, a rubber, a urethane, an elastomer and combinations thereof.

1           9.     The insert of claim 1 wherein the body has a periphery, wherein the first  
2     edge contacts the body, and wherein the sheet wraps about periphery of the body such  
3     that at least a portion of the sheet overlaps itself.

1           10.    The insert of claim 1 wherein the sheet has greater strength in a  
2     peripheral direction than in a longitudinal direction.

1           11.    The insert of claim 1 wherein the body includes a proximal portion and a  
2     distal portion, and wherein at least one longitudinally extending slit is formed in the  
3     proximal portion of the body.

1           12.    A ball bat comprising:

2                   a substantially tubular frame extending along a longitudinal axis having a  
3     handle portion and a primary hitting portion;

4                   a substantially tubular body coaxially aligned with the hitting portion of  
5     the frame; and

6                   at least one sheet having a proximal edge, a distal edge, and first and  
7     second side edges, the sheet coupled to at least a portion of one of the hitting portion of  
8     the frame and the body such that the first and second edges each extend from the  
9     proximal edge to the distal edge along a path that is substantially non-parallel with the  
10    longitudinal axis.

1           13.     The ball bat of claim 12 wherein the first edge overlaps the second edge  
2     along at least a portion of the path to form an overlapped seam.

1           14.     The ball bat of claim 12 wherein the first edge is positioned adjacent to  
2     the second edge along at least a portion of the path to form a non-overlapped seam.

1           15.     The ball bat of claim 12 wherein the hitting portion includes an inner  
2     surface and an outer surface, and wherein the at least one sheet is coupled to the inner  
3     surface of the hitting portion.

1           16.     The ball bat of claim 12 wherein the hitting portion includes an inner  
2     surface and an outer surface, and wherein the at least one sheet is coupled to the outer  
3     surface of the hitting portion.

1           17.     The ball bat of claim 12 wherein the at least one sheet includes first and  
2     second sheets with the second edge of the first sheet overlapping the first edge of the  
3     second sheet and the second edge of the second sheet overlapping the first edge of the  
4     first sheet.

1           18.     The ball bat of claim 12, wherein the path taken by at least one of the  
2     first and second side edges between the proximal edge and the distal edge is selected  
3     from the group consisting of helical, sinusoidal, convoluted, jagged, curved, irregular  
4     and combinations thereof.

1           19.     The ball bat of claim 12 wherein the sheet comprises a material selected  
2     from the group consisting of a fiber matrix, a rubber, a urethane, an elastomer and  
3     combinations thereof.

1           20.     The ball bat of claim 12 wherein the hitting portion has an inner surface,  
2     wherein the first edge contacts the inner surface of the hitting portion, and wherein the

3 sheet covers at least of a portion of the inner surface such that at least a portion of the  
4 sheet overlaps itself.

1 21. The ball bat of claim 12 wherein the body includes a proximal portion  
2 and a distal portion, and wherein at least one longitudinally extending slit is formed in  
3 the proximal portion of the body.

1 22. A substantially tubular insert for a bat wherein the insert extends along a  
2 longitudinal axis, the insert comprising:

3 a plurality of layers, each layer forming at least part of a tubular shape  
4 and connected to at least one of the other layers, each layer having a proximal edge, a  
5 distal edge, and first and second side edges, the first and second edges of each layer  
6 extending from the proximal edge to the distal edge along a path that is substantially  
7 non-parallel with the longitudinal axis.

1 23. The insert of claim 22 wherein each layer is bonded to at least one other  
2 layer, and wherein each layer overlaps at least a portion of the at least one other layer.

1 24. The insert of claim 23, wherein each layer includes a plurality of fibers,  
2 and wherein the fibers of each layer are oriented in substantially the same direction.

1 25. The insert of claim 24, wherein the plurality of layers includes at least  
2 first and second sets of layers, wherein the fibers of the first set of layers are orientated  
3 at between 0 and 90 degrees relative to the longitudinal axis, and wherein the fibers of  
4 the second set of layers are orientated at between 90 and 180 degrees relative to the  
5 longitudinal axis.

1 26. The insert of claim 25 wherein the first set of layers are bonded to each  
2 other, wherein the second set of layers are bonded to each other, and wherein one of  
3 the first set of layers is bonded to one of the second set of layers.

1           27.     The insert of claim 25 wherein each of the first set of layers is bonded to  
2     at least one of the second set of layers, and wherein the second set of layers are spaced  
3     apart from each other.

1           28.     The insert of claim 25 wherein the layers of the first and second set of  
2     layers are bonded in a random order.

1           29.     The insert of claim 25 wherein the fibers of the first set of layers are  
2     orientated at between 65 and 85 degrees relative to the longitudinal axis, and wherein  
3     the fibers of the second set of layers are orientated at between 95 and 115 degrees  
4     relative to the longitudinal axis.

1           30.     The insert of claim 22, wherein the path taken by at least one of the first  
2     and second side edges between the proximal edge and the distal edge is selected from  
3     the group consisting of helical, sinusoidal, convoluted, jagged, curved, irregular and  
4     combinations thereof.

1           31.     The insert of claim 22 wherein the layers are comprised of a material  
2     selected from the group consisting of a fiber matrix composite, a metal matrix  
3     composite, a carbon matrix composite, a rubber, a urethane, an elastomer and  
4     combinations thereof.

1           32.     The insert of claim 22 wherein the plurality of layers includes at least six  
2     layers.

1           33.     The insert of claim 22 wherein the majority of the plurality of layers has  
2     substantially the same length between the proximal edge to the distal edge, when  
3     measured parallel to the longitudinal axis.

1           34.     The insert of claim 22 wherein each layer has a thickness between 0.003  
2     inches and 0.015 inches.

1           35.     The insert of claim 22 wherein the majority of the plurality of layers  
2 substantially overlap one of the other layers.

1           36.     The insert of claim 22 wherein the first and second edges of each layer  
2 of the plurality of layers are spaced apart from the first and second edges of the other  
3 layers of the plurality of layers.

1           37.     The insert of claim 22 wherein at least one of the plurality of layers has  
2 its first edge at least partially overlapping its second edge to form a single-layer  
3 overlapped seam.

1           38.     The insert of claim 22 wherein at least one of the plurality of layers has  
2 its first edge positioned adjacent to its second edge to form a single layer non-  
3 overlapped seam.

1           39.     A method of manufacturing a composite insert for a ball bat, comprising:  
2 obtaining an elongate, generally cylindrical mandrel having a periphery  
3 and extending along a longitudinal axis;

4                     forming at least first and second layers of composite material into a  
5 predetermined shape, each layer having a proximal edge, a distal edge, and first and  
6 second side edges;

7                     wrapping the first layer about at least a portion of the periphery of the  
8 mandrel such that the first and second edges of the first layer each extend from the  
9 proximal edge to the distal edge along a path that is substantially non-parallel with the  
10 longitudinal axis; and

11                    wrapping the second layer about at least a portion of the first layer such  
12 that the first and second edges of the second layer each extend from the proximal edge  
13 to the distal edge along a path that is substantially non-parallel with the longitudinal  
14 axis; and

15                    removing the mandrel from the at least first and second layers.

1           40.    The method of manufacturing an insert of claim 39, further comprising  
2   the step of adjusting the second layer so that the first and second edges of the second  
3   layer do not overlap any of the first and second edges of the first layer.

1           41.    The method of manufacturing an insert of claim 39, further comprising  
2   the step of wrapping at least one additional layer onto the second layer such that the  
3   first and second edges of the additional layer each extend from the proximal edge to the  
4   distal edge along a path that is substantially non-parallel with the longitudinal axis.

1           42.    The method of manufacturing an insert of claim 39, further comprising  
2   the steps of:  
3                    wrapping a shrinkable material about the at least first and second layers;  
4                    curing the insert at a predetermined temperature; and  
5                    removing the shrinkable material.

1           43.    The method of manufacturing an insert of claim 39, further comprising  
2   the steps of:  
3                    providing a substantially tubular frame having a handle portion and a  
4   primary hitting portion; and  
5                    inserting the insert into the hitting portion of the frame.

1           44.    The method of manufacturing an insert of claim 43, further comprising  
2   the steps of:  
3                    inserting a bladder into the inside diameter of the insert; and  
4                    pressurizing the bladder.

1           45.    The method of manufacturing an insert of claim 44, further comprising  
2   the steps of heating the insert and the frame.



1           46.    The insert of claim 39 wherein at least one of the first and second layers  
2    has its first edge at least partially overlapping its second edge to form a single-layer  
3    overlapped seam.